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THE PHILOSOPHICAL TERRAIN OF BEHAVIOR ANALYSIS: A REVIEW OF B. A. THYER (ED.), THE PHILOSOPHICAL LEGACY OF BEHAVIORISM

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The Philosophical Legacy of Behaviorism, edited by Bruce A. Thyer, is a set of original contributions, each dealing, from a behavioral stance, with one of the following major topics of philosophy: epistemology, ethics, consciousness, language, free will and determinism, and self-control. Confusions about radical behaviorism and its similarities to, and differences from, other behavioral and nonbehavioral approaches are described in the book, which provides a state-of-the-art description of the philosophical underpinnings of behavior analysis.

Key words: radical behaviorism, philosophy, private events, epistemology, ethics

Behaviorists have long been interested in the conceptual issues that underlie and provide a framework for their program, and this book is evidence of that continuing interest. Conceptual issues are the domain of the philosophy of the science of behavior, that is, *behaviorism.* Behaviorism and the science of *behavior analysis* may be described as being intertwined. Behavior analysis reflects the assumptions, rules, distinctions, and desiderata that have been developed as the philosophy of that science; that is, the professional behavior of the scientists of behavior is controlled to a great extent by the philosophy of the science of behavior. Conversely, the philosophy is supported or weakened by the findings of the science. In this respect I was heartened to read in Schnaitter's chapter that ''it is hazardous to identify 'behaviorism' with 'the writings of B. F. Skinner,' as some have done'' (p. 211), and that ''behaviorism can and should be defined without reference to Skinner despite the fact that he is its major architect'' (p. 212). Outside observers could be forgiven if they thought of radical behaviorism as a quasireligion. One is reminded of the medieval Scholastics in that many radical behaviorists have supported their positions by citing the scripture according to Skinner.

In his preface, the editor, Bruce Thyer, presents the aim of the book as providing original contributions, each dealing with a major topic of philosophy: epistemology, ethics, consciousness, language, free will and determinism, and self-control. Thyer closes his preface with a quotation from Karl Marx to the effect that philosophers have only interpreted the world, but the point is to change the world. According to Thyer, from this perspective, behaviorism is alive and thriving. I agree that behaviorism is alive, but I know of no evidence that it is having a significant impact in changing any society (cf. Lamal, 1989). A prerequisite for behaviorism to affect the larger society is clarity among behaviorists themselves concerning the methods, epistemology, assumptions, and goals of the behaviorist program. This process of clarification involves the drawing of important distinctions between, and recognition of commonalties among, varieties of behaviorism, and this book is a milestone in that process. Behaviorism is widely and consistently depicted as a simplistic and incomplete, if not wrongheaded, picture of humankind. In contrast, the contributors to this book show behaviorism to be a highly developed, sophisticated account as well as the basis of fruitful research programs. The topics covered are those with which any student of philosophy is acquainted; however, the book provides a unique opportunity for the student to discover the conceptual foundations of behaviorism about which he or she may be misinformed.

BEHAVIORISM AND SOCIAL DEVELOPMENT

In chapter 1, ''The Origins of Behaviorism,'' Michael Commons and Eric Goodheart

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present their general stage model, ''a system that classifies development in terms of a task-required hierarchical organization of required response'' (p. 11). According to Commons and Goodheart, behavior analysis is conducted at the highest stages of social development. This chapter is problematic. Some of the problems are substantive; some are mechanical or stylistic. One of the basic propositions of the general stage model is that ''society progresses not by discarding what came before, but by integrating it within a more hierarchically complex level of organization'' (p. 10). But it seems equally plausible, and more parsimonious, to say that many beliefs (e.g., witchcraft) *have* been discarded. For example, the authors' description of the historical change in the concept of the self does not, in my view, support their position. According to Commons and Goodheart, there is a shift in the conception of self from mentalistic explanations of human actions to materialistic explanations. At the highest stages of social development, the self is considered to be reflective of physical laws that can be observed to operate in other realms. Again, it is equally plausible and more parsimonious to assert that the older concept of the self was discarded, replaced by a different concept.

Commons and Goodheart say that for a culture to progress, the *number* of innovators ''seems to be the largest bottleneck in cultural development'' (p. 16). But couldn't the *status* of the innovators be equally or more important? Studies of diffusion of innovations show that, in general, innovations are more likely to be widely adopted if the advocates of the innovations are of high status (Barnett, 1953; Loomis, 1971).

In their conclusion, Commons and Goodheart assert that behavior-analytic practitioners are often mentalists. Doubtless some are, but they cite no evidence to support their assertion. The authors also assert that a ''decentration,'' that is, the abandonment of ''the ghost in the machine,'' will be selected for. But, again, they provide no basis for believing this will happen. This kind of wishful thinking (like ''saving the world through behavior analysis'') on the part of behavior analysts really should be abandoned.

BASIC PRINCIPLES AND CRITICISM OF BEHAVIORISM

Jay Moore, at the outset of his chapter ''The Basic Principles of Behaviorism,'' correctly emphasizes that the difference between behaviorism and cognitivism, as well as the differences among the varieties of behaviorism, can be largely traced to the collateral assumptions underlying these viewpoints. Moore says, ''Radical behaviorism is particularly concerned with epistemology'' (p. 46). Yes, but why? The behaviorist ontological stance seems to be settled in favor of monist materialism (the view that there is but one fundamental reality, the material, as opposed to the immaterial, or a reality consisting of both the material and the immaterial, i.e., dualism), but the epistemology is still a matter of debate. This debate reflects two factors, the problem of private events, that is, our being the sole observers of some aspects of our behavior, and radical behaviorism's pragmatic stance. These factors arise in several chapters of this book, as I will show.

The assumption of a dualist ontology poses the insoluble problem of how one kind of entity (e.g., an immaterial mind) could control, or be controlled by, a different kind of entity (e.g., a material body). In his discussion of antimentalism, Moore makes the important point that mentalism does not entail dualism, although dualism is probably the most common form of mentalism. Some varieties of mentalism (e.g., cognitive psychology) are as materialist monist as radical behaviorism, but these forms of mentalism appeal to inner causes to explain behavior.

After briefly considering Watson's S-R behaviorism, mediational S-O-R neobehaviorism, and behavior analysis, Moore outlines the nature and principles of radical behaviorism. He then provides a needed and helpful discussion of methodological behaviorism. This discussion is important because, as Moore points out, contemporary psychology is tightly linked to, and predicated on, methodological behaviorism. The epistemological position of methodological behaviorism is that scientific psychology can be concerned only with the relation between publicly observable behavior and publicly observable variables of the past and present:

> In particular, psychology cannot be concerned

> with mental/subjective experience, and it cannot use introspective reports. Two corollaries are (a) that behavior can be adequately explained without appeal to ''mental'' terms, and (b) that any use of mental terms is meaningful only to the extent that the terms are related to publicly observable behavior. (p. 51)

Another critical feature of methodological behaviorism is the use of mediating organismic variables, inferred entities, states, acts, mechanisms, and processes. These organismic variables are deemed necessary for adequate explanations in psychology. In this way, mediational neobehaviorism is the foundation for much of modern cognitive psychology.

Why should nonphilosophers care about these issues? Because they exemplify philosophy and science entwined. As Moore points out, consistent with methodological behaviorism, traditionally schooled contemporary psychologists attribute behavior to mediating variables, rather than to relevant contingencies. In the view of radical behaviorists, this philosophy results in theories of behavior that are

> incomplete and vague, obscure important details, allay curiosity by getting us to accept fictitious way stations as explanatory, impede the search for relevant environmental variables, misrepresent the facts to be accounted for, falsely assure us about the state of our knowledge, and lead to the continued use of scientific techniques that should be abandoned. (p. 56)

Moore further suggests that the greatest difference between radical behaviorism and methodological behaviorism is their view of verbal behavior. The methodological behaviorist sees the chief function of language as referential, that is, words refer to things in the world. In contrast, the radical behaviorist looks to the contingencies that control verbal behavior. Thus, ''a given instance of verbal behavior may be under the discriminative control of an object, but no scientific term is a thing or construct that stands for, symbolizes, or refers to another thing'' (p. 57).

Moore ends his chapter by discussing the radical behaviorist stance on dispositions, namely that it is mistaken to posit an internal disposition as a cause of behavior. Rather, causes of behavior are to be found in establishing operations and contingencies. Moore's chapter lays out the radical behavioral position on important concepts and conceptual issues and should be required reading for any serious student of behavior analysis.

Richard Garrett, in his chapter ''Epistemology,'' says that because epistemology is primarily concerned with truth, it is primarily concerned with certain kinds of verbal behavior. For example, in comparing discriminated operants of a pigeon and a child, wherein the child correctly tacts a cat, Garrett says, ''only the child's [and not the pigeon's] response is verbal and so only the child's response can be said to be *true* or *false* and is therefore of central concern to the epistemologist'' (p. 70). Thus it is through tacts that language acquires the kind of meaning that is relevant to truth and thus to epistemological reflection.

Garrett introduces the concept of a content-dependent statement, whose truth depends upon the meaning and reference of its predicate. A simple content-dependent statement is true ''if and only if the respected properties of its predicate terms correspond to the properties belonging to its referent or referents'' (p. 74). Garrett uses as an example the statement *John sits,* where *John* is the referent of *sits.* If some of John's properties correspond to (or are identical with) the properties respected by the verbal community for using the tact *sits,* then the statement is true. But if there is no correspondence (or identity) between these respected properties and some of John's properties, then the statement *John sits* is not true (p. 74).

Garrett allows that this definition reflects a correspondence theory of truth; but unlike other correspondence theories of truth that involve a correspondence between statements and the world, his theory posits ''*a correspondence between the respected properties and some of the properties belonging to the statement's actual referent or referents*'' (p. 75). For example, a correspondence exists between the respected properties associated with the statement *John sits* and some of the properties of what the speaker is referring to. To say that the two sets of properties *correspond* is simply to say that they are *identical* with one another.

Garrett says his theory of truth follows ''quite naturally, if not strictly'' (p. 77) from

B. F. Skinner's analysis in *Verbal Behavior* (1957). But Garrett also criticizes some of Skinner's epistemological assertions. Contra Skinner, Garrett sees a serious problem with any attempt to establish a scientific epistemology; thus, ''a scientific epistemology would have to rest in part at least upon a more fundamental, non-scientific, philosophical epistemology from which it derived its credentials'' (p. 81; cf. Lamal, 1983; Liegland, 1999; Rorty, 1979). He also maintains that there is a confusion on Skinner's part in maintaining that rational deliberation plays no important role in the determination of behavior, yet Skinner's theory is his ''own attempt to utilize *rational deliberation as a means of changing behavior*'' (p. 84).

In addition to truth, justification is said by Garrett (and other epistemologists) to be a necessary condition for knowledge. Justification is important because it aids us in avoiding false beliefs. Garrett maintains that one of the central tasks (if not *the* central task) of epistemology is to develop an adequate theory of justification, and he considers to what extent Skinner's *Verbal Behavior* (1957) contributes to such a development. Garrett discusses two issues, the realism-antirealism debate and the naturalistic fallacy, concluding that Skinner's belief in the possibility of a *normative scientific epistemology* (i.e., one that can improve the truth-seeking practices of the community) is unwarranted. This seems to be a valid conclusion if one adheres to a nonpragmatic epistemology, but pragmatism offers another approach more in line with Skinner's belief. I am discriminating pragmatic positions from nonpragmatic ones in terms of privilege. Traditional nonpragmatic philosophy is foundationalist; that is, the responsibility and privilege of philosophy are to determine what is true. Recent developments in pragmatic philosophy, however, entail a concern with empirical matters and to that extent philosophy becomes naturalized. Thus, philosophy and science may become so entwined that they are virtually indistinguishable. This is not surprising, given pragmatism's traditional focus on effective action or ''successful working.'' Unfortunately, Garrett does not consider pragmatism.

An example of a radical behaviorist who does is Leigland (1999), who says that a number of themes addressed by pragmatists are relevant to the science of behavior analysis. One theme concerns the traditional assumption of philosophers that the mind has special properties or processes that allow the accurate representation of reality. ''Knowledge claims are to be assessed regarding the accuracy of representation, and philosophy's task in pursuing such questions is thus foundational with respect to questions of mind, language, and knowledge'' (Leigland, p. 484; see also Lamal, 1983; Rorty, 1979). Pragmatists have endeavored to show how this view of the ''mind as the mirror of nature'' may be dispensed with. The notion of a physical world in which organisms interact is not in question. Rather, pragmatists such as Rorty question ''whether it makes sense to speak of mind, of language, or of a particular vocabulary . . . as more or less *representing* that world'' (Leigland, p. 485). The argument is that no vocabulary may be said to more accurately represent reality than any other; rather, different vocabularies suit different purposes. Leigland discusses Skinner's own antirepresentationalism as well as his pragmatic view of truth.

Garrett's conclusion about the inadequacy of Skinner's view may be less compelling if one considers the more recent developments concerned with rule-governed behavior. An analysis in terms of rule-governed behavior of Garrett's emphasis on norms and rational deliberation might, for example, conclude that norms and rational deliberation are to a great extent, if not wholly, explicable in behavior-analytic terms. The most recent work that Garrett cites is Skinner's *Beyond Freedom and Dignity* (1971).

Roger Schnaitter's purpose in his chapter ''Some Criticisms of Behaviorism'' is to consider three central themes from the peak era of criticism of behaviorism (more particularly radical behaviorism), roughly the period from the late 1950s through the 1970s. These themes are (a) the epistemological problem, (b) the problem of stimulus independence of behavior, and (c) intentionality. He maintains that behaviorists have virtually ignored certain difficulties raised against behaviorism by its critics. After discussing radical behaviorism and contrasting it to cognitive psychology, as well as considering mechanism, reductionism, and innateness, Schnaitter turns to the

three persistent and central criticisms of radical behaviorism:

1. The epistemological problem. The epistemological criticism is that radical behaviorism imposed a debilitating constraint upon itself by stipulating that any account of behavior must be expressed in terms of variables that operate at the same level as the behavior to be accounted for. After noting this criticism, Schnaitter differentiates between the epistemological heritages of radical behaviorism and logical positivism, including a consideration of operationism. He concludes this section with a brief discussion of nonfoundational epistemologies and argues that an epistemological criticism of radical behaviorism based on the view that it is allied with logical positivism or operationism is misdirected.

2. The problem of the stimulus independence of behavior. This is the view, contra radical behaviorism, ''that human behavior in natural contexts is substantially free of direct environmental influence. Behavior is too often novel, or creative, or autonomous and free'' (p. 226). In a rather lengthy section, Schnaitter describes and responds to versions of this criticism. Lashley (1951) for example, addressed the problem of serial order in behavior and ''presented numerous examples where a stimulus chain could not account for the serial ordering of a series of individual responses'' (p. 228). Chomsky (1959) argued that in nonlaboratory linguistic settings, controlling stimuli cannot be identified except post hoc. In part, Schnaitter uses the distinction between token-identity physicalism and type-identity physicalism to rebut the criticism, pointing out that any individual stimulus (token) can be given an objective, physical description. But the stimulus classes (type) to which organisms respond ''can only be determined empirically, by observing the effect that individual stimuli have on the behavior of the subject'' (p. 234). Thus, every individual clock (token) can be given a physical description, but we cannot give a physical description of clock (type), the category of which every conceivable clock is a member. Rather, the definition of the type is functional: a device for telling time. In Schnaitter's view, the type-token physicalism distinction avoids the necessity of introducing the mental as the only alternative to the physical in those instances in which restricting oneself to a ''physical thing language'' (a legacy of logical positivism) is inadequate.

3. The intentionality problem. We constantly ascribe beliefs and desires to others as well as to ourselves. *I believe that Tom Jones is lazy; I wish he would drop my class.* Such beliefs and desires are the heart of intentionality. As Schnaitter says, many philosophers have concluded that intentionality is a necessary property of the mental, and thus of being human. It follows that intentional predicates are a necessary part of psychological descriptions. Or, in philosophical parlance, ''the intentional is ineliminable'' (p. 238). The problem is that radical behaviorism is widely considered to be incompatible with the notion of intentionality as the core of human psychology (''the intentional stance''). On Schnaitter's view, the intentional stance ''is a serious problem deserving from the behaviorist a prolonged and serious response. . . . Purely dismissive gestures . . . [such as] the standard behavioristic line that the mental is the fictional . . . [are] just not good enough'' (p. 239; see also Foxall, 1999).

After pointing out that nobody has advanced a definitive analysis of intentionality, Schnaitter suggests some possible avenues for behaviorists to explore. He concludes with a tentative interpretation of intentionality in terms of tacts and autoclitics. For example, the statement *I believe it is going to rain,* is the tact *it is going to rain,* modified by the autoclitic *I believe.* The tact serves as the stimulus for the autoclitic response. Thus, contrary to the intentional stance, '' 'belief' is neither a reference to a proposition nor a psychological attitude directed onto it by a secondary verbal effect of the probabilistic property of the primary descriptive response'' (p. 244). For Schnaitter an important feature of radical behaviorism is that it offers a way of relating intentional private events back to the organism's adaptation to the world.

ETHICS, FREE WILL, AND DETERMINISM

Humans appear to be the only animals that display embarrassment or shame, thus supporting the notion that a concept of ethics is unique to our species. In spite of this uniqueness, Ernest Vargas argues, in his chapter

''Ethics,'' ''There is nothing supernatural about ethics'' (p. 89).

David Hume in *A Treatise of Human Nature* (see Hudson, 1969) famously wrote that an ''ought'' cannot be derived from an ''is.'' In other words, ethical statements cannot be derived from descriptions of the world, including people. To do so is to commit the famous *naturalist fallacy*. Hume's view has been widely and often uncritically accepted, with the exception of some behaviorists, most notably Skinner. Vargas's discussion is in the Skinnerian tradition of rejecting the incommensurability of *is* and *ought* statements. On this view, *ought* statements, statements of value, are as much a part of a natural science view of the world as are *is* statements. ''Both are verbal relations descriptive of events, but events with differing kinds of contingent controls'' (p. 89).

According to Vargas, the traditional ethical stance is the result of assuming agency; that is, that persons are capable of choosing ethical (right) over unethical (wrong) courses of action. Against this view, Vargas describes a contingency explanation of actions. As he points out, giving an ethical label to aspects of someone's behavior does not explain that behavior. Furthermore, nothing about the form or topography of behavior defines it as ethical or unethical; rather the context in which the behavior occurs, as well as its consequences, must be taken into account. Vargas thus agrees with those who argue that ambient events and conditions dictate a society's ethical injunctions to greater or lesser degree. The examples used to illustrate this thesis are usually taken from preliterate societies or their vestiges in today's world. Vargas, however, provides the reader with examples from contemporary society.

In this vein, Vargas asserts, ''Natural selection operates not only on anatomy and physiology, but on behavior'' (p. 101). Referred to culture, this is a contentious issue; some (e.g., Boyd & Richerson, 1985; Cavalli-Sforza & Feldman, 1981) argue that it is mistaken to try to extend the concept of natural selection in evolutionary theory, at least literally and unqualifiedly, to cultures. Boyd and Richerson, for example, describe four differences between genetic and cultural inheritance. For example, they distinguish natural selection from cultural selection (''directly biased transmission,'' p. 174). They point out that natural selection changes the frequency of different variants in the population by culling some variants but not others. This means that the effect of selection depends on the amount of variation in the population. In contrast, the effect of cultural selection is independent of the amount of behavioral variation in the population, because learning creates new variants. Moreover, they contend that although ''culture has the properties of an inheritance system . . . culture can have these properties only if individual learning is not too important in determining behavior'' (p. 98). Cavalli-Sforza and Feldman argue that the ''probability of acceptance [of a behavior] as a measure of *cultural selection* must be clearly differentiated from the *Darwinian* or *natural selection* due to the cultural trait [behavior]'' (pp. 15–16). Indeed, some cultural practices that are selected for may be deleterious in terms of Darwinian selection.

Most ''rights statements'' are mands, according to Vargas. Such statements ''specify a set of conditions that are, roughly speaking, rewarding to the speaker'' (p. 106). He analyzes rights statements in terms of their immediate reinforcing consequences as well as schedule effects that control their resistance to extinction. In view of the extensive concern throughout the world with human rights, more elaborate discussion of rights statements would have been welcome. For example, one would not hold that all statements that specify a set of conditions rewarding to the speaker are rights statements (as Vargas seems to acknowledge). So how do rights statements differ from others? Clearly, rights statements also call for an analysis in terms of rule governance. But, curiously, Vargas does not do this, even though he describes ethics statements as ''guidelines for effective or approved action'' (p. 110).

Evolutionary psychology is currently a fashionable program, and ethical issues are a concern from this perspective. Vargas interestingly points out, however, that ethical outcomes that are justified on the basis of evolutionary processes erroneously make those processes purposive in a teleological sense. He says that outcomes of practices may indeed be predicted, ''but the phenomena whose understanding allow for the prediction are themselves valueless'' (p. 111).

Great amounts of time and verbal behavior have been devoted to the issue of free will, and behavior analysts have been major participants in the debate and discussion. Is there anything new or interesting that can be said about this hoary topic? I assume, perhaps erroneously, that the behavior-analytic readers of Bruce Waller's chapter, ''Free Will, Determinism, and Self-Control,'' will already know that Skinner opposed the view of those who equate free will with chance, and that he attacked those who ''espouse a miracle-working mind or spirit that sets human free will apart from the natural world'' (p. 191). But the new and interesting feature that Waller addresses is that Skinner seems to have had little to say about compatibilism. Compatibilism is the view that free will and moral responsibility are compatible with determinism. The classic source of compatibilism is David Hume, and its most noted contemporary proponent is Daniel Dennett. Waller asserts, ''compatibilism is the overwhelmingly favored position of contemporary philosophers, and has been for decades'' (p. 191). According to Waller, although Skinner did not explicitly address compatibilism, his arguments are nonetheless a powerful attack against it. As Waller says, ''In order to hold onto moral responsibility (what Skinner calls 'dignity') compatibilists must retain deep elements of creative special choice: choice that defies explanation and escapes examination'' (p. 192). As one who has never understood the compatibilist's view in having it both ways (determinism *and* some kind of free will), I was interested to read that Waller also sees a serious problem at the core of compatibilism.

The free will versus determinism debate invariably includes the question of responsibility for actions. Holding persons responsible seems to require acceptance of free will. After all, if all actions are determined, how can one be held morally responsible? A behaviorist rejoinder is that on pragmatic grounds we must arrange contingencies that reinforce moral, ethical, and legal behavior, and reduce, eliminate, or prevent immoral, unethical, and illegal behavior. The assumption underlying this position is that no society dominated by illegal and unethical behavior can survive.

Waller argues that the ascription of moral responsibility supports ''an entrenched system of privilege and inequity'' (p. 200) and that this is one reason the behaviorist rejection of moral responsibility prompts antibehaviorist attacks. Finally, he says,

> As behaviorists have begun to take free will more seriously, there is a tendency to treat it as a special power: neither miraculous nor mysterious, certainly, but still requiring higher-level cognitive powers that make free will uniquely human. (p. 202)

Waller argues, however, that higher level cognitive powers are not an essential condition for freedom. Rather, ''Freedom is in the capacity and opportunity to respond effectively to our environment with a rich range of behavior that has been shaped for success in the environment'' (p. 203).

PRIVATE EVENTS AND VERBAL BEHAVIOR

In their chapter ''Verbal Behavior,'' Jon Bailey and Robert Wallander claim that Skinner, in *Verbal Behavior* (1957), was able to ''offer an analytical system which would essentially account for private events and serve as a useful tool to those who wish to analyze complex human behavior'' (p. 118). In the immediately preceding sentence, however, they say that these private events are ''essentially invisible [to others] and unmeasurable.'' These two characteristics, however, make the analysis of private events problematic, contrary to the unwarranted optimism of these authors as well as others. Private events—their nature, their access, and their role in overt behavior—have been the source of much debate and discussion (e.g., Friman, Wilson, & Hayes, 1998; Lamal, 1998). However, at least at the outset, one gets little sense of this from Bailey and Wallander.

The topic of private events is fraught with difficulties, as exemplified by Bailey and Wallander's discussion of thinking as verbal behavior. They admit that ''the analysis of thinking is not an easy one to grasp'' (p. 149). Indeed. The authors assert that ''Behavior analysis is interested in the causal role of private events'' (p. 144) such as thinking, and that the verbal behavior framework enables an analysis of such private events. Other behavior analysts (e.g., the chapter by Hayes, Wilson, & Gifford, pp. 160, 163 ff.) would disagree. If one grants that the only useful dis-

tinction between public and private events is that the latter are private, one is still left with the practical question of how private events can be analyzed and controlled and how they can play a role in the pragmatic pursuit of effective action. The view of Bailey and Wallander raises serious ontological and epistemological questions (see the chapters by Moore and by Schnaitter).

The real value of an analysis of verbal behavior is said to emerge when processes such as self-editing and autoclitics are examined. Such processes illuminate what the subject is doing that would not otherwise be evident to others. Bailey and Wallander maintain that self-editing has ''great benefit to a speaker'' (p. 146), as when a speaker privately rejects one verbal response in favor of another, thereby avoiding punishment. Thus, a child may substitute a nonobscene exclamation for an obscene one in the presence of his or her parents. A speaker may also ''make a remark after modifying it with an autoclitic that will reduce the likelihood or even amount of punishment which would follow a response'' (p. 146). Autoclitics are often described as good social skills. The example Bailey and Wallander give is of a manager who needs to provide corrective feedback to a subordinate and who says to a secretary who is also present, ''We need a few minutes alone to discuss a private matter,'' rather than the blunt ''I need you to leave us alone for a while.''

Bailey and Wallander rightly conclude that Skinner's view of the role of the listener as critical in understanding verbal behavior has been underappreciated by behavior analysts and almost completely ignored by the rest of psychology and philosophy.

In their consideration of private events, ''Consciousness and Private Events,'' Steven Hayes, Kelly Wilson, and Elizabeth Gifford maintain, correctly I believe, that public agreement about aspects of the world does not provide ''assurance of proper contingency control'' (p. 157). That is, ''truth by agreement'' can be erroneous. They also maintain that private events, the world within the skin, can be a legitimate focus of study. But how do we know if our observations of private events are scientifically valid? The answer is in manipulation of contingencies based on verbalizations about private events. We are able to predict and control the emission of the verbalizations. So observations of private events are valid according to the pragmatic truth criterion of behavior analysis. But there is a problem here. We have not observed the private events; what we have observed, predicted, and controlled are, at best, the verbalizations about private events. The behavior analyst's goal is the prediction and control of behavior, the behavior of others as well as one's own. If we hold to the view that private events are kinds of behavior, how do we know whether in fact we have successfully predicted and controlled the private behavior of others? Indeed, the authors acknowledge, ''Skinner rightly points out that 'differential reinforcement cannot be made contingent upon the property of privacy' '' (p. 159). They go on to outline the four ways Skinner described by which the verbal community can shape ''conventional'' verbal responses to private stimuli. But ''conventional'' verbal responses may not be accurate or truthful verbal responses, and this is a problem that cannot be ignored or glossed over.

After considering private events and the philosophical basis of behavior analysis, including the noncausal status of private events, the authors turn to the analysis of such events. Hayes et al. say that behavior analysts have excluded private events from empirical research, and, in their view, this is due to faulty theoretical positions combined with a failure to use certain scientific methods.

One important kind of private events is referred to by the term *consciousness,* more specifically *self-consciousness* or *self-awareness.* The authors define self-awareness as ''that set of stimulus conditions to which only one individual has direct access—that is, private events'' (p. 166). As Skinner argued, the verbal community plays a critical role in our developing such self-awareness.

According to Hayes et al., the difficult, opaque realm of private events can be analyzed by means of relational frame theory, which ''is an operant account of the acquisition of derived stimulus control, as is seen in stimulus equivalence'' (Hayes et al., p. 169). An outline of relational frame theory is followed by a consideration of its implications for the analysis of private events. In the view of Hayes et al., there is no reason in principle that private stimuli cannot participate in equivalence relations with public stimuli. Re-

lational frame theory is said to describe ''the means by which private stimuli can come to participate in various relational classes, and thus describes the means by which self-knowledge becomes useful'' (p. 175).

Skinner conjectured that self-knowledge is the result of four processes. Three of these processes involve direct training by the verbal community of discrimination of private events based on observable correlates of those events. The fourth process, stimulus induction or transfer via metaphor, is a verbal process, according to the authors, and thus relies on relational frames. They thus provide a relational frame theory definition of metaphor as well as how that concept accounts for private events, including emotions, thoughts, intentions, and purposes.

In an interesting section titled ''Purposes, Values, and Goals,'' Hayes et al. offer a relational frame theory analysis of meaninglessness and suicide, ''the human dilemma.'' The reader can judge to what extent this approach is accurate. The authors also offer an initial approach to the construction of meaning in life, the flip (not to be flippant) side of suicide and meaninglessness.

Hayes et al. conclude their chapter with a consideration of why there has been a dearth of research on private events. Here they say that one of the reasons for the neglect of such events is that ''while a behavior analyst might include a private event in an analysis, no behavior is a manipulable 'cause' of behavior. In behavior analysis, knowledge is tested by experimental analysis, not by mere inference'' (p. 182). But of course behavior often is a manipulable cause of behavior. Perhaps in proof the word ''private'' was inadvertently omitted, so that the intended passage should read, ''no private behavior is a manipulable 'cause' of behavior.''

An emphasis, as much in this book illustrates, on the fundamental pragmatic orientation of behavior analysis conflicts with an emphasis on the importance of private events. This is because there is no way of knowing if we have accurately described, predicted, or changed any private event of another, because by definition it is directly knowable only by the other. There are doubtless very many instances in which we have good reason to believe that we have achieved accurate description, prediction, or control of private events, but believing that we have done so, and knowing that we have (within the constraint of fallibilism), are two different states of affairs. Perhaps we can learn from the experienced lawyers who advised Monica Lewinsky before her grand jury testimony:

> The lawyers told her that her interpretation or impression of what other people were thinking, their state of mind, or their apparent reaction was not fact. Lewinsky did not have to testify to that, and she shouldn't. What you thought the president knew or what Vernon Jordan knew is not a fact. The facts are what people said and did. (Woodward, 1999, p. 423)

Speaking of inference, the authors say that inference about private causal processes is a valid method in cognitive psychology. Presumably, it is also an acceptable method for behavior analysis. This is an example of how the demarcation between radical behaviorism or behavior analysis and cognitive psychology (as well as humanism, psychodynamic approaches, etc.) becomes very blurred when behavior analysts become focused on the inside story.[1]

CONCLUSION

Despite some reservations, I believe this book provides a state-of-the-art description of the philosophical underpinnings of behavior analysis. Whether this book advances behavior analysis, that is, helps applied and experimental analysis of behavior to achieve the goals of accurately describing, predicting, and controlling behavior, remains to be seen. This book can assist behavior analysts in the applied and basic areas of research to sharpen their verbal behavior and perhaps alert them to conceptual pitfalls and dead ends. A critical prerequisite for the advancement of any science is asking the right questions. The contributors to this book have asked and discussed important conceptual questions, and in addressing them may contribute to engen-

[1] M. J. Marr (personal communication, February 2, 2000) points out that the role of private events in cognitive psychology is totally different than in behavior analysis. Such events in the former are conceptual or theoretical mediational constructs such as *encoding*, *processing*, and *representation*. They are causal only in the most abstract sense, unless they have unambiguous referents in the nervous system.

dering more effective behavior on the part of all behavior analysts.

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